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EXAMINER

GUHARAY, KARABI

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 05/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/721,709

Applicant(s)

PARK ET AL.

Examiner

Karabi Guharay

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on Amendment C, filed on 28 February, 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☐ Claim(s) 14-22 and 35-49 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 14-22 and 35-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/717,069.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

***Response to Amendment***

Amendment C, filed on February 28, 2003 has been entered and considered.

Claims 8-13, and claims 29-34 are cancelled.

Claims 14-22 are amended.

New claims 35-49 are added.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 35-40, 42, 47-49 rejected under 35 U.S.C. 102(b) as being anticipated by Amemiya et al. (US 5742122).

Regarding claims 35 & 47, Amemiya discloses a plasma display device (Fig 2) comprising a first substrate (1), a second substrate (2) located in a spaced relation from the first substrate, a plurality of first substrate electrode pairs (7) formed at a constant interval, barriers (31) formed the second substrate (2), and a first substrate dielectric layer (23) formed on the first substrate and the plurality of the electrode pairs having plurality of grooves (area between protruding parts 23a) wherein each electrode pair is located between grooves (see Fig 11), and each groove is located above a barrier ( Fig 2).

Regarding claims 36-39, Amemiya discloses that the plurality of grooves having a predetermined depth which creates an exhaust path between barriers, are each

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located to correspond with top portions of the barriers, and has a width wider than a width of a corresponding barrier, and formed in a direction similar to a direction in which the barriers are formed (see Fig 2).

Regarding claim 40, Amemiya discloses that the barriers are formed in a lattice (lines 1-2 of column 8).

Regarding claim 42, Amemiya discloses that the lower portion of the first substrate dielectric layer (23) with grooves is in a spaced relation to upper portions of the barriers 31 wherein grooves are located only above barriers.

Regarding claim 48, Amemiya discloses that each groove is formed in a direction in which electrode pairs are formed (see Fig 2).

Regarding claim 49, Amemiya discloses that each groove is formed in a direction approximately perpendicular to a direction in which in which electrode pairs are formed (see Fig 2).

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 45-46 are rejected under 35 U.S.C. 102(e) as being anticipated by Amemiya (US 6525470).

Regarding claims 45-46, Amemiya discloses a plasma display device (Figs 1-3) comprising a first substrate (11) a plurality of electrode pairs (X, Y) formed on the first substrate, a second substrate (16) located in a spaced relation to the first substrate, barriers (19) are formed on the second substrate (16), a first substrate dielectric layer

(14) formed on the first substrate and on the electrode pair, having plurality of the grooves (G, 21) where each groove is located between the pair of electrodes, and each groove is centrally located between barriers 19 (see Fig 1).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 41 is rejected under 35 U.S.C 103(a) as being unpatentable over Amemiya et al. (US 5742122).

Regarding claim 41, Amemiya et al. meet all the limitations of claim 41-42 having plurality of address electrodes W on the second substrate (2) in a direction similar to the a direction of the barriers while Amemiya is silent about the second dielectric layer between second substrate and the barriers.

However, in an AC plasma display it is well known that the electrodes are covered by dielectric layers (see US 5909083). Thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to have a first dielectric layer on the second substrate and the second substrate electrode to obtain a ac plasma display.

Claims 14-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amemiya et al. (US 5742122), in view of Amemiya (US 6525470).

Regarding claim 14, Amemiya discloses a plasma display panel (Fig 2) comprising a first substrate (1), a plurality of first substrate electrode pairs (7) formed on the first substrate, a second substrate (2) second substrate electrodes formed on the second substrate (W) to cross the first substrate electrode pairs, barrier ribs (31) are formed in the first and second direction (Amemiya teaches barrier ribs arranged in lattice form, first direction being the column direction and the second direction being row direction of the display, see lines 1-2 of column 8) and a dielectric layer (23) formed on the first substrate(1) wherein the first substrate electrode pairs (S, Sa) have a predetermined height, wherein the dielectric layer (23) includes plurality of grooves (area between two protruding part) of a predetermined width and depth in the first direction (column direction) and second direction (row direction) on a surface region of the dielectric 23 (see Fig 2).

But, Amemiya fails to disclose that each groove is centrally located between two adjacent barriers, and a first dielectric layer on the on the second substrate electrode.

However, Amemiya, in Patent # 6525470, discloses a plasma display with the second dielectric region (14) having plurality of grooves (G, 21 of Fig 1-Fig 3) defined between two protruding part of the dielectric region (Fig 4 & Fig 5), which is centrally located between adjacent barriers 19 (see Fig 1). Amemiya teaches that this centrally located groove at the gap provides further advantage of reducing the starting voltage of the device (see lines 44-51 of column 3). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have grooves in the dielectric layer located centrally between the adjacent barriers so as to reduce the starting voltage of the device.

However, in an AC plasma display it is well known that the electrodes are covered by dielectric layers (see US 5909083). Thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to have a first dielectric layer on the second substrate and the second substrate electrode to obtain a ac plasma display.

Regarding claim 15, Amemiya teaches lattice type barrier rib, in which barriers in the first direction are perpendicular to the barriers in the second direction, wherein grooves form exhaust paths.

Regarding claim 16, Amemiya discloses that the groove is formed in a region of the dielectric (23) approximately parallel to the barriers in the first direction (see Fig 2).

Regarding claim 17, Fig 2 clearly shows grooves extending the along a direction which is perpendicular to extension of column electrodes (w) thus approximately parallel

to the barriers in the second direction in a lattice type barrier structure (which is not shown in Fig 2).

Regarding claim 18, Amemiya teaches grooves on the dielectric layer (23) in both column direction and as well as row direction (see Fig 2), thus corresponding to the barriers in first and second direction in a lattice type barrier structure.

Regarding claim 21, Amemiya discloses that grooves formed in a corresponding region of the second dielectric layer between the barriers in the first direction and the barriers in the second direction (Fig 2).

Regarding claims 19, 20 & 43-44, Amemiya (# 6525740) discloses that the grooves are formed in a corresponding region of the second dielectric (14) only between barriers (19) in the first direction (Fig 1) which is parallel to the electrode pairs, and above the second substrate electrode D, and each groove (21) is formed in a portion of the second dielectric (14) between the electrodes of each of the first substrate electrode pairs (see Fig 5).

Regarding claim 22, Amemiya (# 6525470) discloses that the groove (21, Fig 1-3) is narrower than the barriers.

### ***Conclusion***

Applicant's arguments with respect to claims 14-22 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP



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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Other Prior Art Cited***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure : Komaki et al. (US 6255780) ; Lee et al. (US 6531820); Amemiya et al. (US 6492770).

***Contact Information***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karabi Guharay whose telephone number is (703) 305-1971. The examiner can normally be reached on Monday-Friday 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (703) 305-4794. The fax phone number for the organization is (703) 308-7382.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

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